13. A functional chitosan derivative characterized by being formed by incorporating to an at least partially deacetylated chitin/chitosan at least two functional groups selected from:

- a carbohydrate having a reducing terminal being incorporated to an amino group at the 2-position of a glucosamine unit constituting said chitin/chitosan;
- a photo-reactive functional group being incorporated to an amino group at the 2-position of a glucosamine unit constituting said chitin/chitosan;
- an amphipathic group being incorporated to an amino group at the 2-position of a glucosamine unit constituting said chitin/chitosan or a hydroxyl group at the 3-position or 6-position of a glucosamine unit or acetylglucosamine unit constituting said chitin/chitosan; and
- a glycosaminoglycan being incorporated to an amino group at the 2-position of a glucosamine unit constituting said chitin/chitosan.

14. A functional chitosan derivative as recited in claim 13, characterized in that the degree of deacetylation of the chitin/chitosan is at least 40%.

15. A functional chitosan derivative as recited in claim 13, characterized in that the carbohydrate having a reducing terminal is a carbohydrate having 20 or less constituent carbohydrate units.

16. A functional chitosan derivative as recited in claim 15, characterized in that the carbohydrate having a reducing terminal is a neutral disaccharide.

17. A functional chitosan derivative as recited in claim 13, characterized in that the degree of substitution of carbohydrates having a reducing terminal is 0.1-80%.

... photo-reactive functional group is chosen from among carbonylazide groups, sulfonylazide groups and aromatic azide groups.

the degree of substitution of the photo-reactive functional groups is 0.1-80%.

20. A functional chitosan derivative as recited in claim 13, characterized in that the amphipathic group is a non-ionic group.

21. A functional chitosan derivative as recited in claim 20, characterized in that the amphipathic group is a polyoxyalkylene alkyl ether group.

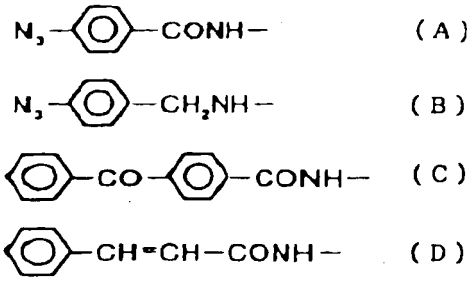
22. A functional chitosan derivative as recited in claim 13, characterized in that the degree of substitution of the amphipathic groups is 5-70%.

23. A functional chitosan derivative as recited in claim 13, characterized in that the glycosaminoglycan is a heparin derivative.

24. A functional chitosan derivative characterized by being formed by incorporating to an at least partially deacetylated chitin/chitosan at least one functional group selected from:

- a carbohydrate having a reducing terminal selected from lactose, maltose, melibiose, cellobiose, laminaribiose and mannobiose and equivalents thereof and being incorporated to an amino group at the 2-position of a glucosamine unit constituting said chitin/chitosan;

- a photo-reactive functional group selected from the following (A)-(D) and equivalents thereof:



- an amphipathic group being incorporated to an amino group at the 2-position

the 3-position or 6-position of a glucosamine unit or an acetylglucosamine unit constituting said chitin/chitosan; and

- a glycosaminoglycan being incorporated to an amino group at the 2-position of a glucosamine unit constituting said chitin/chitosan.

25. A health-care material comprising a functional chitosan derivative as recited in any one of claims 13-24.

26. A medical material for wound dressings, anti-adhesion materials, hemostatics, sealants for body fluids or gases, clathrates for drug delivery or encapsulating agents for cells adhesive comprising a functional chitosan derivative characterized by being formed by incorporating to an at least partially deacetylated chitin/chitosan at least one functional groups selected from:

- a carbohydrate having a reducing terminal being incorporated to an amino group at the 2-position of a glucosamine unit constituting said chitin/chitosan;

- a photo-reactive functional group being incorporated to an amino group at the 2-position of a glucosamine unit constituting said chitin/chitosan;

- an amphipathic group being incorporated to an amino group at the 2-position of a glucosamine unit constituting said chitin/chitosan or a hydroxyl group at the 3-position or 6-position of a glucosamine unit or acetylglucosamine unit constituting said chitin/chitosan; and

- a glycosaminoglycan being incorporated to an amino group at the 2-position of a glucosamine unit constituting said chitin/chitosan.

REMARKS

Applicant's claims 1-24 have been cancelled and new claims 25-26 have been added.